



# PRODUCT/PROCESS CHANGE NOTIFICATION

---

PCN MPG-EEP/04/578

---

## **M50FW, M50LPW, M50FLW Firmware Hub and Low Pin Count Product Families, TSOP40 Environmental Friendly Package and Assembly Location Change**

### **WHAT IS THE CHANGE?**

The present PCN replaces and upgrades PCN MPG/EE/0086 / CPCN MPG/EEP/04/450.

The products currently assembled and tested on the **TSOP40** production lines of ST Microelectronics, Tuas, Singapore, location will be assembled in AMKOR, Shanghai, China, back-end location, and tested in both the ST Toa Payoh, Singapore, plant and AMKOR, Shanghai, location.

The assembly location switch will be concurrent with the introduction of the Environmental friendly package concept, RoHS compliant (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment) identified by the "G" suffix in the device name.

Concurrent with the above change the grade 1 range (0°C to 70°C) will be replaced with the grade 5 range (-20°C to 85°C).

For the package description see appendix 2.

### **WHY?**

STMicroelectronics EEPROM & Serial Non Volatile Memory Division strategy is to support the growth of our customers on a long-term basis. In line with this commitment, the move to the AMKOR location will increase the production capacity and assure the line up with the international environmental friendly package requirements.

### **WHEN?**

The production ramp up in AMKOR, Shanghai, China will gradually replace, starting from June 2004 the current production from ST-TUAS, Singapore.

The ramp down of the ST-TUAS, Singapore plant will start from July 2004, and the production will shut down completely by December 2004.

### **HOW WILL THE CHANGE BE QUALIFIED?**

The AMKOR, Shanghai, China, TSOP40 package will be qualified according to the STMicroelectronics, standard qualification procedure.

The qualification report will be available in April 2004 for the M50FW040/FW080, M50LPW040/LPW080, and June 2004 for the M50LPWW116, M50FW016 and M50FLW040.

**HOW CAN THE CHANGE BE SEEN?**

**Box Label Marking (new style).** The box label contains the traceability code:

**PP YWWLLL WX TF**

Where "PP" stands for the Assembly site:

"8B" for ST TUAS Singapore (SGP)  
 "GA" for AMKOR Shanghai China (CHN)

Where "TF" stands for the Test and Finishing site:

"8B" for ST TUAS Singapore (SGP)  
 "88" for ST TOA PAYOH Singapore (SGP)  
 "GA" for AMKOR Shanghai China (CHN)

**DEVICE MARKING**

The topside marking of each device assembled in TSOP40 includes:

**TSOP40**



**Example AMKOR CHINA**



**ABOUT TRACEABILITY**

The traceability for TSOP40 on the topside marking of each device is as follows:

<b>B</b>	ECO level	E for ECOPACK®
<b>PP</b>	Assembly line location	"8B" for ST TUAS Singapore (SGP) "GA" for AMKOR Shanghai China (CHN)
<b>LLL</b>	Chronological sequence number	
<b>WX</b>	Wafer fab ID	
<b>COO</b>	Country of origin	"SGP" for Singapore "CHN" for China
<b>TF</b>	Test and finishing location	"8B" for ST TUAS Singapore (SGP) "88" for ST TOA PAYOH Singapore (SGP) "GA" for AMKOR Shanghai China (CHN)
<b>Y</b>	Year of assembly	"4" for 2004
<b>WW</b>	Week code	"28" for week 28

## APPENDIX A.

Table 1. Product/Process Change Notification

		PCN MPG-EEP/04/578
Product Family /Commercial Product:	M50FWxxx, M50LPWxxx, and M50FLWxxx	
Customer(s):	ALL	
Type of Change:	Assembly location change, test and finishing location change, and Conformity to International Environmental legislation.	
Reason for Change:	Increase capacity and Conformity to legislation.	
Description of the Change:	New assembly location, lead finishing and mould compound change. New final test and finishing location.	
Forecasted Date of Change:	June 2004 for the M50FW040, -FW080, -FW016, M50LPW040, -LPW080, M50LPW116 and M50FLW040.	
Forecasted Availability Date of Samples for the Customer(s):	April 2004 for the M50FW040/FW080, M50LPW040/LPW080. June 2004 for the M50LPW116, M50FLW040, and M50FW016.	
Forecasted Date for the Internal STMicroelectronics Change, Qualification Report Availability:	April 2004 for the M50FW040/FW080, M50LPW040/LPW080. June 2004 for the M50LPW116, M50FLW040, and M50FW016.	
Marking to Identify the Changed Product:	The box and device label marking, see above.	
Description of the Qualification Program:	Standard qualification program according to STMicroelectronics standard qualification procedure.	
Product Line(s) and/or Part Number(s):	See appendix B	
Manufacturing Location(s):	Catania, Italy, wafer fab location	
Estimated Date of First Shipment:	June 2004 for the M50FW040/FW080, M50LPW040/LPW080. October 2004 for M50LPW116 and M50FLW040, M50FW016.	
Division Product Manager:	C. Dardanne	Date: 11 <sup>th</sup> June 2004
Division Q.A. Manager:	A. Panchieri	Date: 11 <sup>th</sup> June 2004



Customer Acknowledgement of Receipt		PCN MPG-EEP/04/578	
Please Sign and Return to STMicroelectronics Sales Office			
<input type="checkbox"/> Qualification Plan Denied	Name:		
<input type="checkbox"/> Qualification Plan Approved	Title:		
	Company:		
<input type="checkbox"/> Change Denied	Date:		
<input type="checkbox"/> Change Approved	Signature:		
Remark:			
.....			
.....			
.....			
.....			
.....			



## APPENDIX B. LIST OF PRODUCTS CONCERNED

**Table 2. Firmware Hub + Low Pin Count Compatible**

M50FLW040AN5	Replaced by M50FLW040AN5G
M50FLW040BN5	Replaced by M50FLW040BN5G

**Table 3. Firmware Hub**

M50FW016N1	Replaced by M50FW016N5G
M50FW040N1	Replaced by M50FW040N5G
M50FW040N1T	Replaced by M50FW040N5TG
M50FW040N5	Replaced by M50FW040N5G
M50FW040N5T	Replaced by M50FW040N5TG
M50FW080N1	Replaced by M50FW080N5G
M50FW080N5	Replaced by M50FW080N5G
M50FW080N5T	Replaced by M50FW080N5TG
M50FW016N1	Replaced by M50FW016N5G

**Table 4. Low Pin Count**

M50LPW040N1	Replaced by M50LPW040N5G
M50LPW080N1	Replaced by M50LPW080N5G
M50LPW116N1	Replaced by M50LPW116N5G

**APPENDIX C.**

**Table 5. Package Description**

Description / Package	TSOP40	TSOP40 RoHS* Devices with "G" suffix
Line Location	ST TUAS Singapore	AMKOR Shanghai
Package Drawing	G4 - 0079092	G4 - 0079092
Package Size	10x20mm	10x20mm
Lead Frame Material	Alloy 42	Copper
Lead Frame Header	Silver Spot	Silver Spot
Die Thickness	280µm	280µm
Die Attach Material	Silver Epoxy glue	Silver Epoxy glue
Type	OMI 509	Ablebond 8290
Manufacturer	Henkel	Ablestik
Bonding Wire / Method	Gold, 1.2µm, Ball bonding	Gold, 1.0µm, Ball bonding
Mold Compound Type	KE 3300 D	G700
Mould Compound Manufacturer	Toshiba	Sumitomo
Lead Finish	Sn/Pb, 85/15	SnBi
Flammability	UL94-V0	UL94-V0
Thermal Impedance Rth(j-a)	145°C/W	145°C/W

Note: (\*) "RoHS\*" The AMKOR TSOP40 package is compliant with the RoHS requirements. Further more the materials used in this location, and for this package, are free of Antimony Trioxide and TetraBromoBispenil which are today not part of the RoHS Directive 2002/95/EC.

If you have any questions or suggestions concerning the matters raised in this document, please send them to the following electronic mail addresses:

*ask.memory@st.com (for general enquiries)*

Please remember to include your name, company, location, telephone number and fax number.

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.  
ECOPACK® is a registered trademark of STMicroelectronics.  
All other names are the property of their respective owners.

© 2004 STMicroelectronics - All rights reserved

STMicroelectronics GROUP OF COMPANIES  
Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany -  
Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore -  
Spain - Sweden - Switzerland - United Kingdom - United States  
[www.st.com](http://www.st.com)